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dead in three days; whilst the flowers merely placed in water in the ordinary manner remained fresh and healthy. Those that faded soonest were *Reseda odorata* and *Tropæolum majus*, and those which were least affected were *Tagetes erecta* and *Senecio erubescens*.

4. "On the Acidity, Sweetness, and Strength of Wine, Beer and Spirits." By H. Bence Jones, M.D., F.R.S. Received Nov. 17, 1853.

(1.) The acidity of the different liquids was determined by means of a standard solution of caustic soda. The quantity of liquid neutralized was always equal in bulk to 1000 grs. of water at 60° F.

The acidity in different—

Sherries varied from 1·95 grs. to 2·85 grs. of caustic soda.

Madeira	„	2·70	„	3·60	„
Port	„	2·10	„	2·55	„
Claret	„	2·55	„	3·45	„
Burgundy	„	2·55	„	4·05	„
Champagne	„	2·40	„	3·15	„
Rhine wine	„	3·15	„	3·60	„
Moselle	„	2·85	„	4·50	„
Brandy	„	0·15	„	0·60	„
Rum	„	0·15	„	0·30	„
Geneva	„	0·07			„
Whisky	„	0·07			„
Bitter ale	„	0·90	„	1·65	„
Porter	„	1·80	„	2·10	„
Stout	„	1·35	„	2·25	„
Cider	„	1·85	„	3·90	„

Hence the order in which these wines may be arranged, beginning with the least acid, is Sherry, Port, Champagne, Claret, Madeira, Burgundy, Rhine, Moselle.

(2.) The sugar was determined by means of Soleil's saccharometer, which at least gives the lowest limit to the amount of sugar.

The sweetness in different—

Sherries varied from 4 grs. to 18 grs. in the ounce.

Madeira	„	6	„	20	„
Champagne	„	6	„	28	„
Port	„	16	„	34	„
Malmsey	„	56	„	66	„
Tokay	„	74			„
Samos	„	88			„
Paxarette	„	94			„

Claret, Burgundy, Rhine, and Moselle contained no sugar.

Hence the order in which these wines may be arranged, beginning with the driest, is—

Claret	Burgundy	Rhine	Moselle
	Sherry		
	Madeira		
	Champagne		
	Port		
	Malmsy		
	Tokay		
	Samos		
	Paxarette.		

In a dietetic view, assuming that the sugar becomes acid, then the mean results as to the acidity of the different fluids examined, beginning with the least acid, is—

Geneva	Whisky
Rum	
Brandy	
Claret	
Burgundy	
Rhine wine	
Moselle	
Sherry	
Madeira	
Champagne	
Cider	
Port	
Porter	
Stout	
Malmsy	Madeira
Ale	
Tokay.	

(3.) The alcohol was determined by means of the alcoholometer of M. Geisler of Bonn.

The strength of different samples of—

Port	varied from	20·7	per cent. to	23·2	per cent. by measure.
Sherry	„	15·4	„	24·7	„
Madeira	„	19·0	„	19·7	„
Marsala	„	19·9	„	21·1	„
Claret	„	9·1	„	11·1	„
Burgundy	„	10·1	„	13·2	„
Rhine wine	„	9·5	„	13·0	„
Moselle	„	8·7	„	9·4	„
Champagne	„	14·1	„	14·8	„
Brandy	„	50·4	„	53·8	„
Rum	„	72·0	„	77·1	„
Geneva	„	49·4			„
Whisky	„	59·3			„
Cider	„	5·4	„	7·5	„
Bitter ale	„	6·6	„	12·3	„
Porter	„	6·5	„	7·0	„
Stout	„	6·5	„	7·9	„

The Burgundy and Claret have less alcohol than was found by Mr. Brande forty years ago in the wines he examined. The Sherry is now stronger, the Port is not so strong, the Marsala is weaker, the Rhine wine is the same strength, the Brandy is as strong as formerly; the Rum is nearly half as strong again; the Porter is stronger, and the Stout rather stronger than formerly.

Lastly, the specific gravity of each liquid was taken. As this however chiefly depends on the amount of alcohol and sugar present, and as these were directly determined, the specific gravity may be taken as a distant control on the amount of sugar present.

Thus, in those wines in which the amount of alcohol was the same, the specific gravity was found to vary with the amount of sugar found by the saccharometer.

The results of the analysis of each sample of wine, &c. is given in a series of tables, which do not admit of any abstract.

December 22, 1853.

THOMAS GRAHAM, Esq., V.P., in the Chair.

The following papers were read:—

1. "An Inquiry into some of the circumstances and principles which regulate the production of Pictures on the Retina of the Human Eye, with their measure of endurance, their Colours and Changes." By the Rev. W. Scoresby, F.R.S., Corresponding Member of the Institute of France, &c. Received Nov. 19, 1853.

The investigations of the author embrace three distinct cases,—the case of achromatic pictures; that of coloured pictures of uncoloured objects, derived simply or mainly from the influence of light on the eye; and that of the spectra of coloured objects, together with certain applications of the results obtained to other optical characteristics, determinations or phenomena.

The general mode of experiment employed in these researches is described as "the viewing of illuminated objects with a steady fixed gaze at a special point, and then determining the impression on the retina by examining the images developed *with closed eyes*." The time of viewing the objects varied from a momentary glance up to half a minute, more rarely to a minute; and the mode of eliciting the impression was, primarily, by closing the eyelids into gentlest contact, whilst the head was kept unmoved, and the eyelids steady in their original direction. Thus performed, the experiment becomes very simple and manageable, and the results, various as they are in colour or depth of tint, are almost unfailingly elicited and often curious or beautiful.

Whilst the general result of viewing an illuminated object is the production of a clearly-defined picture on the retina, appearing in certain cases instantly, or more commonly, from 3 to 5 seconds after the eyes are closed,—the nature or quality of the picture, with its